

### REMARKS

Claims in the case are 1-8, 12 and 13, upon entry of this amendment. Claims 1-8 have been amended, and Claim 13 has been added herein. The claims have been amended as to form, e.g., by inserting indefinite and definite articles where appropriate, including indentation, and replacing "according to" with --of--. Additional amendments to the claims will be discussed further herein. Basis for added Claim 13 is found in Claim 1, and at page 2, lines 7-9 of the specification.

On page 2 of the Office Action of 18 December 2001, it is stated that Claims 1-8 are under examination. Applicants wish to point out that: (i) the claims in the case at the time of examination were Claims 1-8 and 12; and (ii) the claims in the present case still include Claim 12. Claim 12 is directed to a molded article comprising the composition of Claim 1.

Claims 1, 6 and 7 stand rejected under 35 U.S.C. §112, second paragraph. This rejection is respectfully traversed with regard to the amendments herein and the following remarks.

The Markush groupings within (C) and (D) of Claim 1 have been amended to replace "comprising" with --consisting of--. The preferred recitations within (D) of Claim 1 have been removed by amendment herein. Claims 6 and 7 have been amended in accordance with the amendments made to Claim 1, and in further accordance with the Examiner's comments on page 2 of the Office Action.

In light of the amendments herein and the preceding comments, Applicants' claims are deemed to particularly point out and distinctly claim the subject matter which they regard as their invention. Reconsideration and withdrawal of this rejection is respectfully requested.

Claims 1-8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over European Patent Application No. EP 0 728 811 (**Maruyama et al**) in view of United States Patent No. 5,194,477 (**Liu et al**). In light of the amendments herein and the following remarks, this rejection is respectfully traversed.

The thermoplastic molding composition of Applicants' present claims comprises: (A) an aromatic polycarbonate and/or a polyester carbonate; (B) a graft copolymer produced by a process selected from the group consisting of bulk polymerization, solution polymerization and bulk/suspension polymerization; (C)

optionally at least one thermoplastic polymer selected from the group consisting of vinyl (co)polymers and polyalkylene terephthalates; (D) one or more phosphazenes represented by formulas (Ia) and/or (Ib); and (E) optionally a fluorinated polyolefin. See once amended Claim 1 herein. It is important to note that the graft copolymer (B) of Applicants' composition is not prepared by emulsion polymerization.

Maruyama et al disclose a flame retardant thermoplastic resin composition that includes: an aromatic polycarbonate; a graft copolymer; optionally a copolymer prepared by copolymerizing an aromatic vinyl monomer and a monomer copolymerizable therewith; a phosphazene; and optionally polytetrafluorethylene. See the abstract; formulas (I) and (II) on page 4; and page 5, lines 5-9 of Maruyama et al.

The graft copolymer of Maruyama et al is disclosed as being prepared by processes, such as emulsion, suspension, solution or bulk polymerization (page 3, lines 43-45). The graft copolymer of Maruyama et al's examples was prepared by means of emulsion polymerization (page 5, line 55 through page 6, line 13).

With regard to preparing the graft copolymer of their compositions, Maruyama et al do not disclose, teach or suggest any preference towards selecting the suspension, solution and/or bulk polymerization methods over the emulsion polymerization process. In fact, as pointed out above, the examples of Maruyama et al make use of a graft copolymer prepared by emulsion polymerization. Further, Maruyama et al do not disclose, teach or suggest that improved properties could be obtained from a flame retardant thermoplastic resin composition comprising a graft copolymer that is prepared by processes other than emulsion polymerization.

The graft copolymer (B) of the compositions of Applicants' present claims are prepared by a process selected **only from** bulk, solution or bulk/suspension polymerizations (i.e., to the exclusion of emulsion polymerization). The improved and unexpected results that are possessed by the thermoplastic molding compositions of Applicants' claims are demonstrated in the examples on pages 21-25 of the specification. The molding compositions in accordance with Applicants' present invention (i.e., Examples 1-4) include an ABS graft copolymer prepared by means of bulk polymerization, while the comparative composition of Example 5 includes an ABS graft copolymer prepared by means of emulsion polymerization.

The compositions in accordance with Applicants' present claims have improved physical properties, such as a favorable combination of flame resistance and mechanical properties. In addition, the compositions of Applicants' invention possess further advantages with regard to processability, in particular with regard to improved flow behavior (MVR), and a 20 % reduction in loss of mass during processing of the compositions. See the Table on page 24 of the specification.

Liu et al disclose a flame retardant polyester composition which includes: a polyester resin; a flame retardant comprising, (i) an antimony compound, (ii) a halogenated polycarbonate resin, and (iii) a polyetherimide ester elastomeric resin; optionally a resinous impact enhancer; optionally a mineral reinforcing agent; and optionally a polycarbonate resin, e.g., a polyester carbonate resin. See the abstract; column 1, lines 4-24; and columns 15, line 60 through column 17, line 16 of Liu et al.

The optional impact enhancer is disclosed by Liu et al as including ABS resins prepared by emulsion, suspension or bulk processes (column 14, lines 34-44). However, Liu et al do not disclose, teach or suggest any preference towards selecting the suspension and/or bulk polymerization methods over the emulsion polymerization process. In fact Liu et al disclose that the optional graft copolymers of their compositions, such as ABS resins, are typically prepared by means of emulsion graft polymerization processes (column 14, lines 39-44). Further, Liu et al do not disclose, teach or suggest that improved properties could be obtained from a flame retardant thermoplastic resin composition comprising a graft copolymer that is prepared by processes other than emulsion polymerization.

As discussed previously herein, the graft copolymer (B) of the compositions of Applicants' present claims are prepared by a process selected **only from** bulk, solution or bulk/suspension polymerizations (i.e., to the exclusion of emulsion polymerization). Attention is directed to the discussion above as to the improved and unexpected results that are possessed by the thermoplastic molding compositions of Applicants' claims, which are demonstrated with reference to the examples on pages 21-25 of the specification.

With regard to the preparation of the graft copolymers of their compositions, neither Maruyama et al nor Liu et al provide any disclosure, teaching or suggestion as to a preference towards selecting bulk, solution or bulk/suspension

polymerization methods over the emulsion polymerization process. In addition, neither Maruyama et al nor Liu et al disclose, teach or suggest that improved properties could be obtained from a flame retardant thermoplastic resin composition comprising a graft copolymer that is prepared by bulk, solution or bulk/suspension polymerization methods, as opposed to emulsion polymerization. As such, Maruyama et al in view of Liu et al would not lead one of ordinary skill in the art to arrive at the thermoplastic molding compositions of Applicants' claims.

Maruyama et al disclose flame retardant thermoplastic resin compositions that include phosphazenes as an essential component. Liu et al disclose flame retardant polyester compositions that include as an essential component, a flame retardant comprising: (i) an antimony compound; (ii) a halogenated polycarbonate resin; and (iii) a polyetherimide ester elastomeric resin. Maruyama et al provide no disclosure or suggestion as to including antimony compounds, halogenated polycarbonates or polyetherimide ester elastomeric resins in their compositions. Liu et al provide no disclosure or suggestion as to the inclusion of phosphazenes in their compositions. As such it is submitted that neither Maruyama et al nor Liu et al provide the requisite motivation that would lead one of ordinary skill in the art to combine or otherwise modify their respective disclosures.

As the Court of Appeals for the Federal Circuit has stated, there are three possible sources for motivation to combine references in a manner that would render claims obvious. These are (1) the nature of the problem to be solved, (2) the teaching of the prior art, and (3) the knowledge of persons of ordinary skill in the art. In re Rouffet, 47 USPQ 2d 1453, 1458 (Fed. Cir. 1998). The nature of the problem to be solved and the knowledge of persons of ordinary skill in the art are not present here and have not been relied upon in the rejection. As for the teaching of the prior art, the above discussion has established that neither of the patents relied upon in the rejection provide the requisite teaching, and certainly do not provide the motivation or suggestion to combine that is required by Court decisions.

In attempting to arrive at the thermoplastic molding compositions of Applicants' claims, the rejection appears to impermissibly use Applicants' application as a blueprint for selecting and combining or modifying the prior art to arrive at their claimed invention, thereby making use of prohibited hindsight in the selection and

application of that prior art. The use of hindsight reconstruction of an invention is an inappropriate process by which to determine patentability. In re Rouffet, 47 U.S.P.Q.2d 1453, 1457 (Fed. Cir. 1998). See also In re Fritch, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992).

In light of the amendments herein and preceding comments, Applicants' claims are deemed to be nonobvious and patentable over Maruyama et al in view of Liu et al. Reconsideration and withdrawal of this rejection is respectfully requested.

In light of the preceding amendments and remarks, Applicants' presently pending claims are deemed to meet all the requirements of 35 U.S.C. §112, and to define an invention that is unanticipated, unobvious and hence, patentable. Reconsideration of the rejections and allowance of all of the presently pending claims is respectfully requested.

Respectfully submitted,

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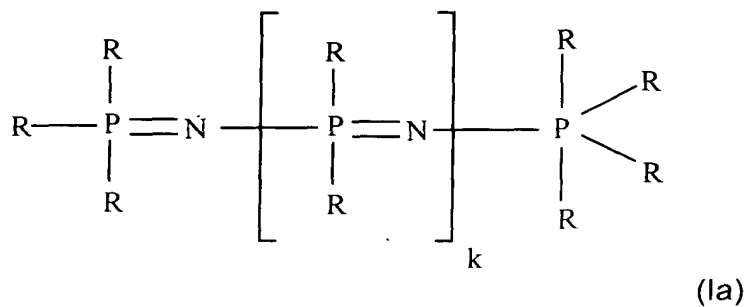
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## **VERSIONS WITH MARKINGS TO SHOW CHANGES MADE**

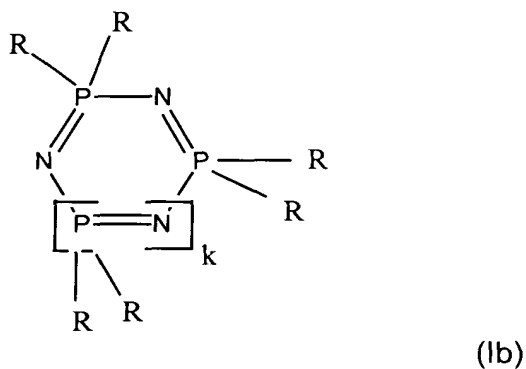
### **IN THE CLAIMS:** (Marked-Up)

The following are versions of the amended claims with markings to show changes made thereto in the present Amendment.

1. (Once Amended, Marked-Up) A [T]~~h~~ermoplastic moulding composition[s] containing:
  - A) 40 to 99 parts by weight of at least one of aromatic polycarbonate and[/or] polyester carbonate;
  - B) 0.5 to 60 parts by weight of graft polymer produced by a process selected from the group consisting of bulk polymerisation, solution polymerisation [or] and bulk/suspension polymerisation [processes] of
    - B.1) 50 to 99 wt.% of one or more vinyl monomers<sub>1</sub> [on] and
    - B.2) 50 to 1 wt.% of one or more grafting backbones having a glass transition temperature of <10°C<sub>1</sub>
  - C) 0 to 45 parts by weight of at least one thermoplastic polymer selected from the group [comprising] consisting of vinyl (co)polymers and polyalkylene terephthalates<sub>1</sub>;
  - D) 0.1 to 50 parts by weight of at least one component selected from the group [comprising] consisting of phosphazenes [of] represented by the formulae<sub>1</sub>



and



in which

R is in each case identical or different and denotes at least one of amino, C<sub>1</sub> to C<sub>6</sub> alkyl, in each case optionally halogenated, [preferably halogenated with fluorine, or] C<sub>1</sub> to C<sub>8</sub> alkoxy, C<sub>5</sub> to C<sub>6</sub> cycloalkyl, C<sub>6</sub> to C<sub>20</sub> aryl, [preferably phenyl or naphthyl,] C<sub>6</sub> to C<sub>20</sub> aryloxy, [preferably phenoxy, naphthyloxy, or] C<sub>7</sub> to C<sub>12</sub> aralkyl, [preferably phenyl-C<sub>1</sub>-C<sub>4</sub>-alkyl,] in each case optionally substituted by at least one of alkyl, [preferably C<sub>1</sub>-C<sub>4</sub> alkyl,] and[/or] halogen, [preferably chlorine, bromine,]

k denotes 0 or a number from 1 to 15[, preferably a number from 1 to 10,]; and

E) 0 to 5 parts by weight of fluorinated polyolefin.

2. (Once Amended, Marked-Up) The [M]moulding composition[s according to claim] of Claim 1 containing:

- 60 to 98.5 parts by weight of A<sub>i</sub>
- 1 to 40 parts by weight of B<sub>i</sub>
- 0 to 30 parts by weight of C<sub>i</sub>
- 2 to 35 parts by weight of D<sub>i</sub> and
- 0.1 to 1 part by weight of E.

3. (Twice Amended, Marked-Up) The [M]moulding composition[s according to] of Claim 1 containing 2 to 25 parts by weight of C.

4. (Twice Amended, Marked-Up) The [M]moulding composition[s according to] of Claim 1 containing 5 to 25 parts by weight of D.

5. (Twice Amended, Marked-Up) The [M]moulding composition[s according to] of Claim 1 wherein vinyl monomers B.1 are mixtures prepared from

B.1.1 a first vinyl monomer selected from at least one of styrene,  $\alpha$ -methylstyrene, halo- or alkyl-ring-substituted styrenes and[/or] (meth)acrylic acid C<sub>1</sub>-C<sub>8</sub> alkyl esters<sub>i</sub> and

B.1.2 a second vinyl monomer selected from at least one of unsaturated nitriles, (meth)acrylic acid C<sub>1</sub>-C<sub>8</sub> alkyl esters and[/or] derivatives of unsaturated carboxylic acids.

6. (Twice Amended, Marked-Up) The [M]moulding composition[s according to] of Claim 1 wherein the grafting backbone B.2 is [selected from among] at least one rubber selected from the group [comprising] consisting of diene rubbers, EP(D)M rubbers, acrylate, polyurethane, silicone, chloroprene and ethylene/vinyl acetate rubber.



7. (Twice Amended, Marked-Up) The [M]moulding composition[s according to] of Claim 1 containing at least one additive selected from the group [comprising] consisting of lubricants, [and] mould release agents, nucleating agents, anti-static agents, stabilisers, dyes and pigments.

8. (Twice Amended, Marked-Up) The [M]moulding composition[s according to] of Claim 1 containing further flame retardants which differ from component D.

13. (Added) The thermoplastic moulding composition of Claim 1 wherein graft polymer B) is prepared by bulk polymerization.